

Figure 1

600

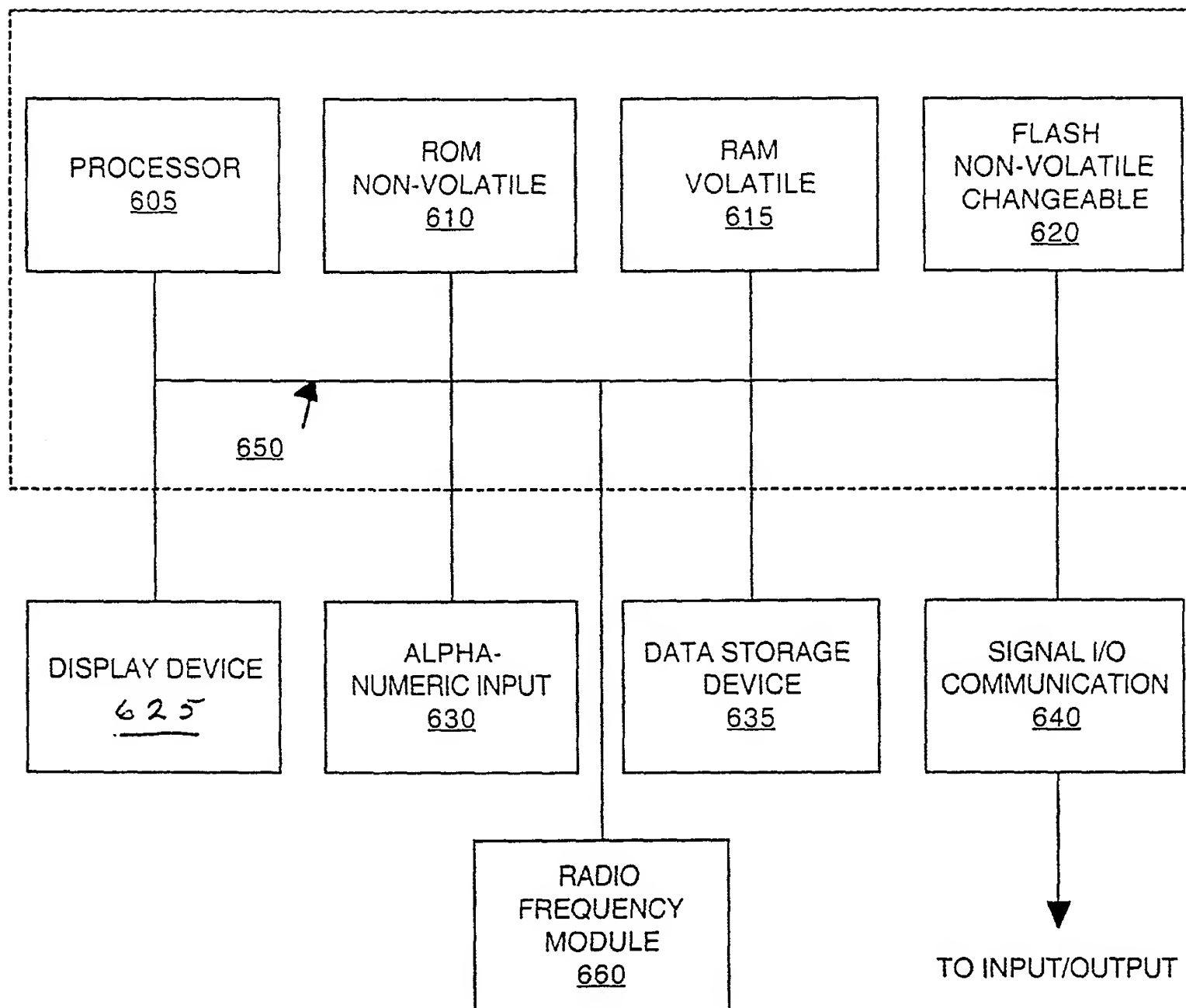
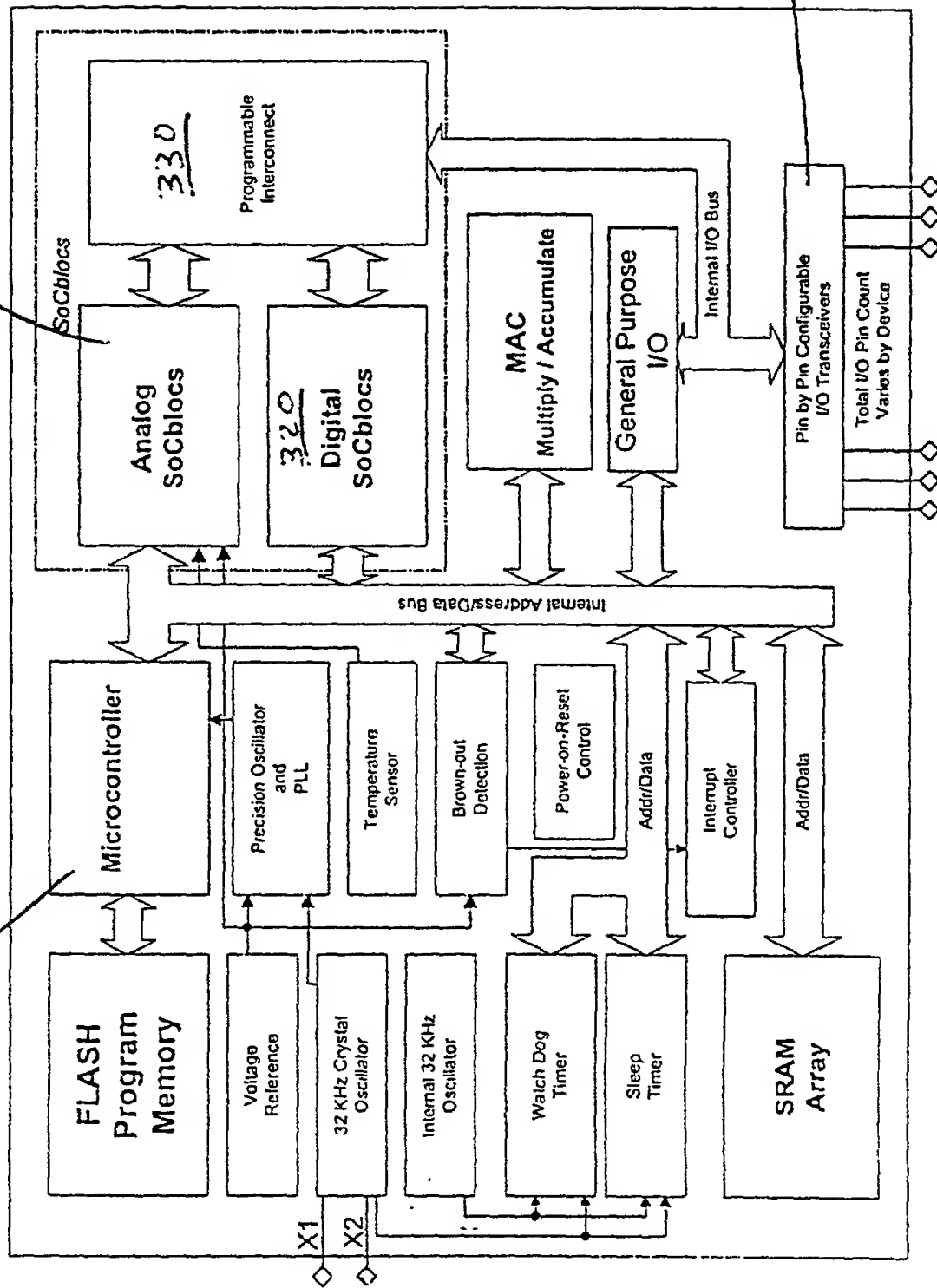


Figure 2

300

350

310



340

FIGURE 3

400

400

test2 - PSoc Designer - [Device Editor]

File Edit View Project Config Build Debug Program Tools Window Help

ADCs

Counters

DACs

Amplifiers

ADC12_3 Counter16_2 UART_1 PGA_1

INSAMP_1

PGA_1

420

430

440

450

User Modules selected for placement

Input

Output

Analog Bus Out

AnalogBus

Gan

CT_BLOCK

AGND

VSS

SC_BLOCK

Reference

430

440

450

PGA_A

Revision B

450

440

Resources Overview Diagram Features Description Specs Parameters API SampleCode Registers ReleaseNotes

Resources

Required

Optional

PSoc™ Blocks

Memory

Pins

1 CT Analog

32 FLASH, 0 SRAM

1 per External I/O

For Help, press F1

Start

test2 - PSoc D... Document1 - Mi...

NUM

2:51 PM

Figure 4

500

test2 - PSoc Designer - [Device Editor]

File Edit View Project Config Build Debug Program Tools Window Help

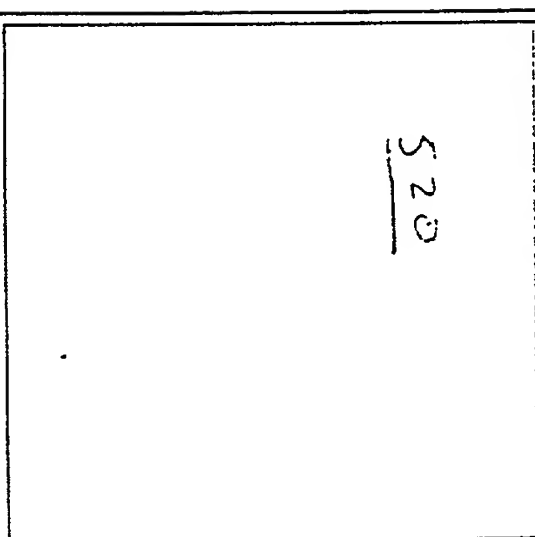
Icons for File, Edit, View, Project, Config, Build, Debug, Program, Tools, Window, Help

Global Resources

CPU_Clock	3_MHz
32K_Select	Internal
PLL_Mode	Disable
Sleep_Inet	512_Hz
24V1 = 24MHz/N	1
24V2 = 24V1/N	1
Analog Power	SC On/Ref Low
Ref Mux	Vcc(2)/+/-BandGap
Op_Amp_Bias	Low
A_Built_Power	Low
SwitchModePump	OFF
VoltMonRange	5 UV
VoltMonThreshold	80%

TXB_1

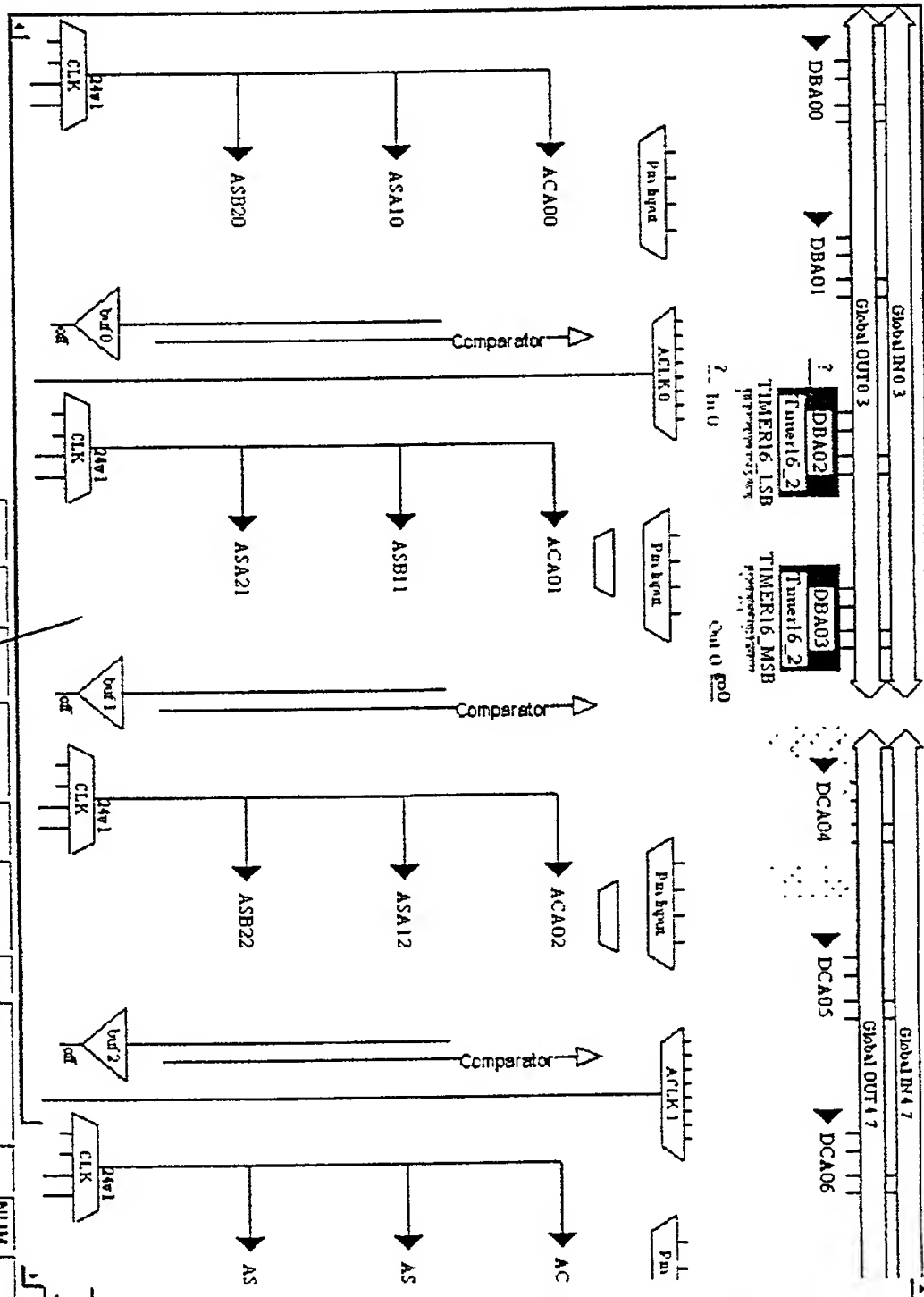
User Module Parameters



User Modules selected for placement

Icons for User Modules: ADCINC12_1, Counter16_1, TXB_1, Timer16_2

410



For Help, press F1

test2 - PSoc D... Document1 - Mi...

2:39 PM

FIGURE 5

510

FIG. 6

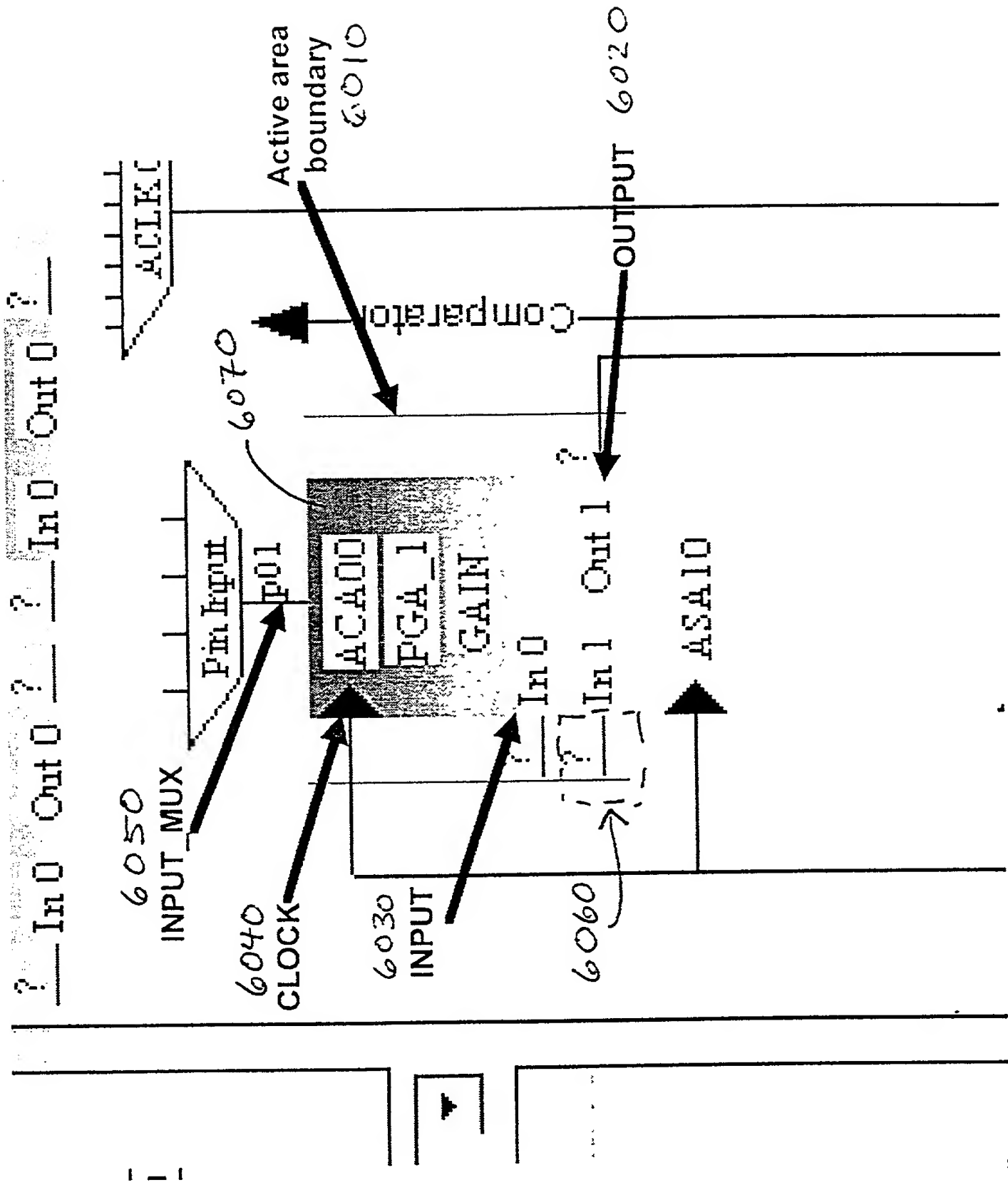


Figure 6

700

```

702 ~<PSOC_DEVICE_DB>
704 ~<USER_MODULE_LIST>
    <!-- Variable Resolution Incremental ADC-->
706 ~<USER_MODULE_NAME="ADCEXP" TYPE="PSOC_ADC" HTML="ADCEXP.HTM" ICON="ADC.ico" METAFILE="ADCEXP.cmf"
    API_PATH_TYPE="CUSTOM">
707 ~<SHAPE SHAPE_TYPE="BLOCKLIST">
708 ~<BLOCK_LIST>
710 ~<BLOCK NAME="ADC" TYPE="ANALOG_SC">
712 ~<REGISTER_LIST>
714 ~<REGISTER NAME="CR0">
716 ~<BITFIELD_LIST>
718 ~<BITFIELD NAME="OSZ" VALUE="OSZ_32"/>
    <BITFIELD NAME="CLOCK_PHASE" VALUE="PHASE_NORM"/>
    <BITFIELD NAME="SIGN" VALUE="POS"/>
    <BITFIELD NAME="CAP_SIZE" VALUE="16"/>
    </BITFIELD_LIST>
    </REGISTER>
    <REGISTER NAME="CR1">
    <BITFIELD_LIST>
    <BITFIELD NAME="CAP_SIZE" VALUE="0"/>
    </BITFIELD_LIST>
    </REGISTER>
    <REGISTER NAME="CR2">
    <BITFIELD_LIST>
    <BITFIELD NAME="A_OUT" VALUE="DISABLED"/>
    <BITFIELD NAME="COMP_OUT" VALUE="ENABLED"/>
    <BITFIELD NAME="AZ_PHASE" VALUE="AZ_PHASE"/>

```

Figure 7A

```

    <BITFIELD NAME="CAP_SIZE" VALUE="0"/>
  </BITFIELD_LIST>
</REGISTER>
<REGISTER NAME="CR3">
  <BITFIELD_LIST>
    <BITFIELD NAME="REF_SELECT" VALUE="COMP"/>
    <BITFIELD NAME="FB_CAP_SELECT" VALUE="PH2_AZ_ENABLE"/>
    <BITFIELD NAME="FB_CAP_GND" VALUE="GND_PH1"/>
    <BITFIELD NAME="SCA_INPUT_MUX_B" VALUE="IN2B"/>
    <BITFIELD NAME="SCB_INPUT_MUX_B" VALUE="IN2B"/>
    <BITFIELD NAME="SBB" VALUE="DISABLE"/>
    <BITFIELD NAME="PWR_SELECT" VALUE="PWR_OFF"/>
  </BITFIELD_LIST>
</REGISTER>
</REGISTER_LIST>
726 - <INPUT_LIST>
  </BLOCK>
</BLOCK_LIST>
<BLOCK_LIST>
  <BLOCK NAME="TMR" TYPE="DIGITAL" INTERRUPT_SOURCE="_TMR_INT" INTERRUPT_TYPE="JUMP">
    <REGISTER_LIST>
      <REGISTER NAME="DIG_BasicFunction">
        <BITFIELD_LIST>
          <BITFIELD NAME="End" VALUE="IsEnd"/>
          <BITFIELD NAME="CompareType" VALUE="LTorEQ"/>
          <BITFIELD NAME="InterruptType" VALUE="TerminalCount"/>
          <BITFIELD NAME="Function" VALUE="Timer"/>
        </BITFIELD_LIST>
      </REGISTER>
      <REGISTER NAME="DIG_Input">
        <BITFIELD_LIST>
          <BITFIELD NAME="DataSelect" VALUE="High"/>
        </BITFIELD_LIST>
      </REGISTER>
    </REGISTER_LIST>
  </BLOCK>

```

Figure 7B


```

<REGISTER NAME="DIG_Output">
  <BITFIELD_LIST>
    <BITFIELD NAME="AUXOutputEnable" VALUE="DISABLE"/>
    <BITFIELD NAME="DigOutputEnable" VALUE="DISABLE"/>
  </BITFIELD_LIST>
</REGISTER>
</REGISTER_LIST>
<INPUT_LIST/>
<BLOCK>
</BLOCK_LIST>
<BLOCK_LIST>
<BLOCK NAME="CNT_LSB" TYPE="DIGITAL">
  <REGISTER_LIST>
    <REGISTER NAME="DIG_BasicFunction">
      <BITFIELD_LIST>
        <BITFIELD NAME="Function" VALUE="Counter"/>
        <BITFIELD NAME="CompareType" VALUE="LTorEQ"/>
      </BITFIELD_LIST>
    </REGISTER>
  </REGISTER_LIST>
</INPUT_LIST>
<INPUT SOURCE="AnalogOut" TYPE="RESERVED_RESOURCE" REGISTER_NAME="DIG_Input"
  BITFIELD="DataSelect"/>
  </INPUT_LIST>
</BLOCK>
<BLOCK NAME="CNT_MSB" TYPE="DIGITAL" INTERRUPT_SOURCE="_CNT_INT" INTERRUPT_TYPE="JUMP">
  <REGISTER_LIST>
    <REGISTER NAME="DIG_BasicFunction">
      <BITFIELD_LIST>
        <BITFIELD NAME="Function" VALUE="Counter"/>
        <BITFIELD NAME="End" VALUE="IsEnd"/>
        <BITFIELD NAME="CompareType" VALUE="LTorEQ"/>
      </BITFIELD_LIST>
    </REGISTER>
  </REGISTER_LIST>

```

Figure 7C

```

</REGISTER_LIST>
<INPUT_LIST>
  <INPUT SOURCE="CNT_LSB" TYPE="BLOCK" REGISTER_NAME="DIG_Input" BITFIELD="DataSelect"/>
</INPUT_LIST>
</BLOCK>
</BLOCK_LIST>
725- <RESOURCE_LIST>
  <RESOURCE NAME="AnalogOut" TYPE="ANALOG_COMPARATOR_OUTPUT">
730-   <INPUT_LIST>
     <INPUT SOURCE="ADC" TYPE="BLOCK" />
   </INPUT_LIST>
  </RESOURCE>
</RESOURCE_LIST>
</SHAPE>
740- <PARAMETER_LIST>
  <PARAMETER NAME="ADCINPUT_SCB" TYPE="INPUT" SOURCE="ADC" REGISTER_NAME="CR1"
BITFIELD="SCB_INPUT_MUX_A"/>
  <PARAMETER NAME="ADCINPUT_SCA" TYPE="INPUT" SOURCE="ADC" REGISTER_NAME="CR1"
BITFIELD="SCA_INPUT_MUX_A_C"/>
  <PARAMETER NAME="ClockPhase" TYPE="BLOCK" SOURCE="ADC" REGISTER_NAME="CR0"
BITFIELD="CLOCK_PHASE"/>
  <PARAMETER NAME="TMRCLK" TYPE="CLOCK" SOURCE="TMR" REGISTER_NAME="DIG_Input"
BITFIELD="ClockSelect"/>
  <PARAMETER NAME="CTRCLKL" TYPE="CLOCK" SOURCE="CNT_LSB" REGISTER_NAME="DIG_Input"
BITFIELD="ClockSelect"/>
  <PARAMETER NAME="CTRCLKM" TYPE="CLOCK" SOURCE="CNT_MSB" REGISTER_NAME="DIG_Input"
BITFIELD="ClockSelect"/>
  </PARAMETER_LIST>
<API_REGISTER_ALIAS_LIST>
  <API_REGISTER_ALIAS NAME="AtoDer0" SOURCE="ADC" REGISTER_NAME="CR0"/>
  <API_REGISTER_ALIAS NAME="AtoDer1" SOURCE="ADC" REGISTER_NAME="CR1"/>
  <API_REGISTER_ALIAS NAME="AtoDer2" SOURCE="ADC" REGISTER_NAME="CR2"/>
  <API_REGISTER_ALIAS NAME="AtoDer3" SOURCE="ADC" REGISTER_NAME="CR3"/>
  <API_REGISTER_ALIAS NAME="CounterMSBFN" SOURCE="CNT_MSB" REGISTER_NAME="DIG_BasicFunction"/>

```

Figure 7D

```

<API_REGISTER_ALIAS NAME="CounterMSBSL" SOURCE="CNT_MSB" REGISTER_NAME="DIG_Input"/>
<API_REGISTER_ALIAS NAME="CounterMSBOS" SOURCE="CNT_MSB" REGISTER_NAME="DIG_Output"/>
<API_REGISTER_ALIAS NAME="CounterMSBDR0" SOURCE="CNT_MSB" REGISTER_NAME="DATA_0"/>
<API_REGISTER_ALIAS NAME="CounterMSBDR1" SOURCE="CNT_MSB" REGISTER_NAME="DATA_1"/>
<API_REGISTER_ALIAS NAME="CounterMSBDR2" SOURCE="CNT_MSB" REGISTER_NAME="DATA_2"/>
<API_REGISTER_ALIAS NAME="CounterMSBCR0" SOURCE="CNT_MSB" REGISTER_NAME="CONTROL_0"/>
<API_REGISTER_ALIAS NAME="CounterLSBFN" SOURCE="CNT_LSB" REGISTER_NAME="DIG_BasicFunction"/>
<API_REGISTER_ALIAS NAME="CounterLSBSL" SOURCE="CNT_LSB" REGISTER_NAME="DIG_Input"/>
<API_REGISTER_ALIAS NAME="CounterLSBOS" SOURCE="CNT_LSB" REGISTER_NAME="DIG_Output"/>
<API_REGISTER_ALIAS NAME="CounterLSBDR0" SOURCE="CNT_LSB" REGISTER_NAME="DATA_0"/>
<API_REGISTER_ALIAS NAME="CounterLSBDR1" SOURCE="CNT_LSB" REGISTER_NAME="DATA_1"/>
<API_REGISTER_ALIAS NAME="CounterLSBDR2" SOURCE="CNT_LSB" REGISTER_NAME="DATA_2"/>
<API_REGISTER_ALIAS NAME="CounterLSBCR0" SOURCE="CNT_LSB" REGISTER_NAME="CONTROL_0"/>
<API_REGISTER_ALIAS NAME="TimerFN" SOURCE="TMR" REGISTER_NAME="DIG_BasicFunction"/>
<API_REGISTER_ALIAS NAME="TimerSL" SOURCE="TMR" REGISTER_NAME="DIG_Input"/>
<API_REGISTER_ALIAS NAME="TimerOS" SOURCE="TMR" REGISTER_NAME="DIG_Output"/>
<API_REGISTER_ALIAS NAME="TimerDR0" SOURCE="TMR" REGISTER_NAME="DATA_0"/>
<API_REGISTER_ALIAS NAME="TimerDR1" SOURCE="TMR" REGISTER_NAME="DATA_1"/>
<API_REGISTER_ALIAS NAME="TimerDR2" SOURCE="TMR" REGISTER_NAME="DATA_2"/>
<API_REGISTER_ALIAS NAME="TimerCR0" SOURCE="TMR" REGISTER_NAME="CONTROL_0"/>
<API_REGISTER_ALIAS NAME="Comp_Ctrl" SOURCE="AnalogComp" TYPE="RESERVED_RESOURCE"
REGISTER_NAME="AnalogComparatorControl"/>
</API_REGISTER_ALIAS_LIST>
</USER_MODULE>
</USER_MODULE_LIST>
</PSOC_DEVICE_DB>

```

Figure 7E